

HIRSCHMANN

Rheinmetall Elektronik



HiWay Hub Family

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The usefulness and the capabilities of the network must always be placed in the context of price. One should always bear in mind user costs in addition to investment costs. Through the integration of SNMP, with its error tolerance, the interpretation of "Plug & Play" and "Hot Swapping" technologies as well as the exceptional maintenance free user friendliness, Hirschmann systems operate with particular effectiveness and reliability.

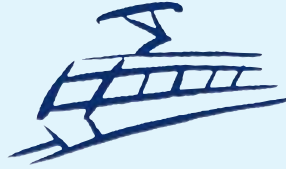
The constant increase in necessary know how requires concentration on as few LAN protocols as possible. This applies even more to the countless products from all of the different manufacturers which increase the costs for tuition, maintenance and administration. By using the Hirschmann solution the technology remains manageable and can be put to optimal use.

Stackable hubs can, in terms of their flexibility, capacity to expand, security and error tolerance, stand comparison with chassis based systems. Undoubtedly they are the best solution in networking large, or even growing, work groups. With the integrated AUI ports or the optional transceiver module for fibre optics and coax, connections can be made without any problem on to a high-ranking network/backbone. When fitted with an ETHERNET management unit countless management files can be swapped using SNMP protocol. This allows the system administrator to locate bottlenecks and errors more easily and to localise them.



Hirschmann **HiWay** hubs are suitable for use in stand alone situations within smaller work groups and easily allow for the scaling of any growth requirements - up to 6 units per stack, allowing for up to 96 users depending on the units used. Due to their ability to segment networks, they can even offer smaller work groups exceptionally, flexible bandwidth management, as each user can be allocated the relevant bandwidth within the network they require. For installation within a data intensive Client/Server environment there is the fast ETHERNET hub. They offer the best performance for offices which are less equipped to handle high loads, as well as connecting to other servers.





Hirschmann Products are designed to have a long life cycle, even when operating in the harsh environments presented by the Industrial world. Immune to high temperature, moisture and electromagnetic interference, they have proved claims of the best down times in the industry.

The advantages of the **HiWay** hub are also in demand as network components between the main intersections of a traffic management system. Together with ETHERNET switches one can connect devices that are kilometres apart without the additional use of a repeater, by the use of fibre optic technology. .



Around a third of the top 500 German companies use networks provided by Hirschmann, and industry specific solutions are in operation all around the world.

For example, the China Steelworks in Kaoheing (Taiwan), the Music Hall in Stuttgart (Germany), the Paris Metro and the Ohio State University (USA) are all networked with Hirschmann products.

It is particularly important in the industrial sector to prevent network problems or to resolve them quickly and thereby reduce network down time. **HiWay** hubs have proven to be the best qualified to do that. Alarm signals (SNMP-Trap) alerting power cuts, configuration changes, critical values of the basic equipment, segmentation and interrupted communications are immediately notified to different destinations. The redundant SNMP Backup Management, error tolerant backup links or the fan free concept greatly raise network availabilities. In addition, meaningful LED displays provide a quick and easy way of indicating status, load and error information.



The **HiWay** fast ETHERNET work group hub **FEH-12TP/M** offers the best performance for the office with peak load needs through the building of fast ETHERNET segments. It raises the performance of the network by a factor of 10 thereby removing bottleneck problems.

By cascading up to 6 hubs into one stack, you can connect up to 78 users. A single SNMP agent can configure up to 3 separate segments per stack. In addition, the optional smart extender module offers a switch port for fibre optic connections to link to other fast ETHERNET units.

By installing redundant links, back-up SNMP agents and a redundant power supply, the FEH-12TP/M **HiWay** fast ETHERNET work group hub provides a very high fault tolerance. System crashes, as a result of a broken cable, system or network failure, can be prevented. Access to the management system itself - outband over the serial port (V.24/RS RS 232) and inband over Telnet - is password protected.

Installation of the fast ETHERNET hub is simple through "Stack & Play" thanks to the automatic hub ID (recognition) and the termination instructions. The individual hubs have an MDI port (switchable), which greatly eases hub to switch cascading. The complete set-up procedure can be monitored and operated through the SNMP protocol from the network management station. Therefore you will not require either training or specialist knowledge thereby saving both time and money.

The **LWL smart extender module** **FEHXM-01MM(FE)** can be installed in any free slot and comes complete with a 100Base-FX SC switched port.

- Scalable through connection via 12 power users in a hub or stack of 6 hubs for connection of up to 78 users
- A socket for the smart extender insert module with switch ports for 100Base-FX
- Error tolerance through redundant power supply (optional), back-up links and back-up SNMP agent
- Best performance for the office with peak load bearing through the use of a fast ETHERNET segmentation at the cheapest price possible
- Stack and Play installation

Product	Order-No.
FEH-12TP/M	943 585-001
Interfaces	12 100BASE-TX (RJ45) Ports - 1 Port for Smart Extender Module
Management	Inband: SNMP, TELNET Outband: Serial Port V.24/RS 232
Software Storage	Flash-EPROM
LED displays	- For the whole Hub: Power, Utilization, Collision, SNMP - Per Port: Partition/Disabled, Link/Traffic
Mechanical construction	19"-Chassis, 1,5 HE
- measurements W x H x D	440 x 65 x 320 mm
- operating temperature	+ 5 °C to + 40 °C
Input power	100 to 240 VAC
Input frequency	50 to 60 Hz
Accessories	Order No.
Redundant Power Supply	943 597-001



FEH-12TP/M

Product	Order No.
Smart extender module	
FEHXM-01MM	943 591-031
Interfaces	1 100BASE-FX-(SC)-Port



FEHXM-01MM

The **HiWay ETH-12TP/M** **ETHERNET hub** is a new ETHERNET work group hub that provides great value for money. It has twelve 10Base T ports (RJ45) as well as an additional AUI port. This makes it ideally suited as a floor divider in small and medium sized networks.

With the optional transceiver module (FOIRL, BNC) the hub can be connected to higher ranking networks without any problem, as its flexible connectors enable it to link in to a concentrator or a backbone very easily. Installation is extremely easy: simply "Plug and Play" without needing to complete any configuration.

The hub is fitted with an ETHERNET management agent as standard, and the RS 232 serial interface provides out of band management access. Any of the open SNMP platforms can be used.

The following modules are available to insert in to the free transceiver slot: the **ETHXM-01MM** **HiWay** LWL transceiver module with one port emulating 10Base-FL and BFOC connectors and the **ETHSXM-01BNC** **HiWay** coax extension module with one port emulating 10Base2 and BNC connectors.

- Value for money networking with best price / performance comparison
- Ideally suited for connecting work groups from a distance through the flexible backbone connectors
- A free slot for a transceiver module (FOIRL, BNC)
- SNMP compatible over an integrated ETHERNET management agent

Types	Order number
ETH-12TP/M	943 505-001
Interfaces	12 ports 10Base-T (RJ45) + 1 AUI interface
Extension module	Order number
ETHXM-01MM	943 516-021
ETHXM-01BNC	943 517-001
Interfaces	
ETHXM-01MM	Plug-in module\ 10Base-FL/FOIRL (BFOC)
ETHXM-01BNC	Plug-in module 10Base2 (BNC)
LED displays	- for the complete hub: Power, SNMP, Collision - per port: Link/Activity, Partition
Mechanical construction	19" sub rack, 1 RU
- Measurements W X H X D	422 x 55 206 mm
- Weight	approx. 1.9 kg
- Operating temperature	0 °C to + 50 °C
Input power	90 to 260 V AC
Input frequency	50 to 60 Hz



ETH-12TP/M

The **ETPS-22TP(/M)** *HiWay* **ETHERNET port switching work group hubs** offer a value for money solution by protecting the existing investment in the network infrastructure, whilst allowing for continuous growth of bandwidth requirements.

They allow real port switching, i.e. the organisation of users into segments, which means data can flow into one segment without influencing other ports. As the ports can be separated into three segments per hub, one can achieve a marked improvement in the network performance.

It is also extremely easy to make any changes to a work group, such as the insertion, moving or changing of the user groups through one of the management consoles.

The *HiWay* ETPS ETHERNET port switching hub comes in 22 port 10BaseT versions with or without management. The individual port switching hub has two optional sockets for **ETHERNET extension modules** (glass fibre optic or coax), which allow for a flexible approach in connecting to a server or backbone. Should your requirements grow, you can cascade up to 4 port switching hubs together. Up to 96 ports can be used off one stack where each of the ports is not reliant on the other ports in one of the 12 possible segments connected to it (6 over the whole stack divided segments, as the cascade cable can transmit 6 data buses).

With the help of the integrated ETHERNET management agent all of the segments in the stack can be monitored. In addition, the serial interface RS 232 port offers complete outband management functionality.

Hirschmanns fan free concept gives a guarantee of a particularly high longevity and quiet operation. Because of this they are ideally suited for installation in an office as well as in special environments which require quiet (i.e. hospitals, and classrooms).

- Up to 96 ports divisible into a maximum of 12 ETHERNET segments
- Optimal band width for each user by moving the individual ports from segment to segment
- With exceptional price/performance comparison and cheap costs per port with ETHERNET port switching, ideal for a fast growing network
- Large selection of Backbone media - two sockets for ETHERNET extension modules (10Base-FL and 10Base2) as well as redundant links over 10Base-FL module
- Fan free concept guarantees particularly high longevity and quiet operation

Type	Order number
ETPS-22TP	943 521-001
ETPS-22TP/M	943 522-001
Interfaces	22 10BaseT (RJ45) ports + 2 connectors for glass fibre or coax extension module
Extension Module	Order number
ETPSXM-01MM	943 575-021
ETPSXM-01BNC	943 574-001
Interfaces	1 10Base-FL (BFOC) port 1 10Base2 (BNC) port
Management	Inband: SNMP, Telnet Outband: Serial port V.24/RS 232
Software storage	Flash EPROM
LED displays	- for the complete hub: Power - per port: Data, Link Status, Segmentation, Port disabled
Mechanical construction	19" chassis, 1 HE
- measurement W X H X D	434 x 44 x 279 mm
- weight	approx. 3.600 g
- operating temperature	0 °C to + 40
Input power	90 to 265 V AC
Input frequency	47 to 63 Hz



ETPS-22TP/M



ETPS-22TP

Hirschmann **mini work group hubs** enable an economical construction of smaller ETHERNET LANs or work groups providing connection onto an ETHERNET backbone. Mini-WG hubs are fitted with an AUI connector that allows for a flexible connection onto a concentrator or a LAN backbone by using a Hirschmann mini transceiver.

- Economical networking for small work groups
- Ideal for connection of work groups at a distance through the flexible backbone connection with the Hirschmann Mini transceiver
- 100 and 150 types of cabling are supported (Mini-WG 8TP)
- Cascadable

The **Mini-WG 8TP** acts as a star coupler with six unshielded twisted pair (10BaseT) interfaces and an AUI interface. It enables the connection onto a CSMA/CD LAN with a transmitting speed of 10Mbit/s. So, for example, you can connect six 10BaseT users with an AUI cable or with a Hirschmann mini transceiver over LWL or more economical twisted pair cable to your local network. The 10BaseT conforms to 100 Ω - and 150 Ω - cabling.

The **Mini-WG 4CX**, on the other hand, has over four unconnected coax (10Base2) interfaces and one AUI interface. On the BNC port, you can directly connect cheaper segments. The AUI port enables you to connect onto an ETHERNET network.

Due to its minimal size, the Mini-WG will fit in to any office environment and is ideally suited for desktop or wall installation.

Product	Order number
MINI-WG 8TP (AUI)	943 427-001
Netshare	
- operating power	min 85 V, max 264 V
- operating frequency	min 47, max 63 Hz
- Max. Performance	20 VA
- Suppression of interference	VDE 0871, curve B (10 kHz-30 Mhz)
- Security	VDE 0805 (IEC950) und VDE 0106 (IEC536) First Class Protection
Interfaces	- 8 Ports to Standard 10BASE-T with RJ45 Connections, protected - 1 AUI-Backbone-Port
Distance traversability	-100 Ω: 100 m - 150 Ω: 300 m (max. 10 dB bei 10 MHz; max. 7 dB bei 5 MHz)
LED displays	- For the whole hub: P Power, CD Collision Detect, JAB Jabber - Per TP Port: Link status, Auto-Partitioning, Data reception, Reversed Polarity, Data transmission
Mechanical construction	Stand alone 1 HE
- Protection	IP 30
- Measurements W X H X D	215 x 35 x 145 mm
- Weight	1500 g
- Operating temperature	0 °C to + 40 °C
Components	- Basic Unit - Network cable (1,5 m lang) - Operating instructions - 1 Pair Wall Brackets

Type	Order-No.
MINI-WG 4CX (AUI)	943 318-001
Netshare	
- operating power	min. 85 V, max. 264 V
- operating frequency	min. 47, max. 63 Hz
- Max. Performance	45 VA
- Suppression of interference	VDE 0871, Curve B (10 kHz-30 MHz)
- Security	VDE 0805 (IEC950) und VDE 0106 (IEC536), First Class Protection
Interfaces	- 4 Ports to 10BASE-2 Standard with BNC Connections - 1 AUI Backbone Port
Range	185 m (RG 58) per Port
LED Displays	- For the whole hub: P Power, DA Data, JAB Jabber - Per BNC Port: CD/PAR Collision Detect/Partitioning - AUI-Port: AUI-PAR Partitioning, Displays e.g. MIKE
Mechanical construction	Stand alone 1 HE
- Safety Feature	1P30
- Measurements W x H x D	215 x 35 x 145 mm
- Weight	1500 g
- Operating temperature	0° C to + 40 °C
Delivery timescale	- Basic Unit - Network cable (1.5 m long) - Operating Instructions - 1 Pair Wall Brackets



MINI-WG 8TP (AUI)



MINI-WG 4CX (AUI)

The **CD ROM handbooks** contain all of the technical data available in Hirshmann handbooks, both in English and German.



Products

CD-ROM manual in German and English
includes the following manuals in Acrobat Reader Format

- Manual for Advanced LAN Switch Release 1.5
- Manual for ETHERNET Version 3.1
- Manual for Management MIKE Release 3.2
- Manual for Management MultiMIKE Release 1.2
- Manual for FDDI Version 2.0
- Manual for Token Ring Version 1.1
- Manual for Bridge/Router insert module ER ISDN
- Manual for FDDI/Ethernet Switch/Router Plug-in module version 1.0
- Manual for Management FCMA Release 3.0
- Manual for MultiLAN Switch Release 2.1
- User Guide for HiWay Fast Ethernet and Ethernet/Fast Ethernet Workgroup Switches
- Installation and Configuration Guide for ATM Uplink Module
- Installation and Configuration Guide for FDDI-DAS Uplink Module
- User Manual for HiWay ETHERNET Workgroup Hub

Order No.

943 590-001

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